Adelaida Hydrology Study

Assessment and Outreach

Community Meeting

August 06, 2020

- **Partnership between: Upper Salinas – Las Tablas Resource Conservation District, San Luis Obispo County Flood Control and Water Conservation District, and United States Geological Survey**

Topics

- Overview of Study – Project Purpose, Scope, and Objectives
- U.S. Geological Survey (USGS) Data Analysis and Needs
- Consent Forms
- Opportunities to Engage
- Question and Answer

Overview of Study

- Study History and Goals
- Identify the scope of work being conducted
- Review of existing data
- Local Participation
  - What type of data is needed
  - Who can participate
  - When data is needed

***GOAL**: To provide a better understanding of the groundwater conditions in the Adelaida area so that informed decisions can be made about managing local water resources*

Evaluation of Groundwater Resources in the Adelaida Area of San Luis Obispo County, California

U.S. Geological Survey , California Water Science Center

Geoff Cromwell
Nicole Fenton
Christina Stamos

Project Purpose, Scope, and Objectives

Purpose and Scope:

- Characterize the hydrology of the Adelaida Area, San Luis Obispo County, California
- Proposed Project Timeline: 2020–2024

Objectives:

- Compile and collect geologic, hydrologic, and hydraulic data
- Quantify the hydrologic budget
- Refine the hydrogeologic understanding of the area with respect to geographic, vertical, and temporal variations

USGS

Problem

- Increased demand for water use has, and likely will, continue to affect groundwater levels and availability

- Adelaida Area is ***not*** in a California Department of Water Resources designated groundwater basin; comprised mostly of consolidated sedimentary rocks

- San Luis Obispo County has a specific need to evaluate historic and current hydrogeologic conditions

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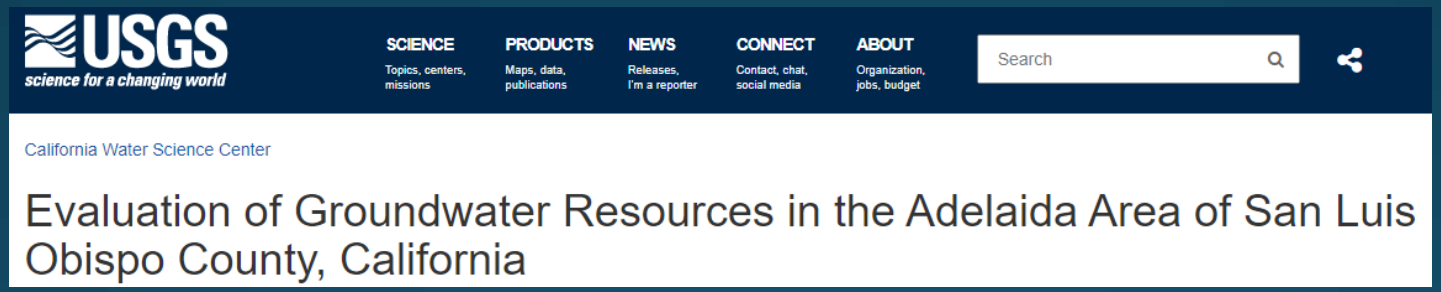
Preliminary Adelaida Study Area

Highlands west of the Paso Robles and Atascadero groundwater basins

Project Tasks and Deliverables

Currently Funded Task

1. Compile and analyze existing hydrogeologic data
    - *April 2020 to March 2021*



Proposed Future Tasks (2021–2024)

2. Collect new hydrologic data
3. Evaluate hydrogeologic system
4. Publications and reporting

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Task 1: April 2020 – March 2021

1. Compile Data
   - Hydrologic budget components
   - Climate, land use, geology, borehole information, and hydrology
   - Landowner hydrogeologic data

2. Evaluate Available Data
   - Assess temporal, spatial, and vertical changes in groundwater, and temporal and spatial changes in surface water

3. Identify Data Gaps
   - Where are data lacking?
   - Where and what type of new data should be collected?

4. Propose Specific Work
   - Data collection
   - Hydrogeologic framework model

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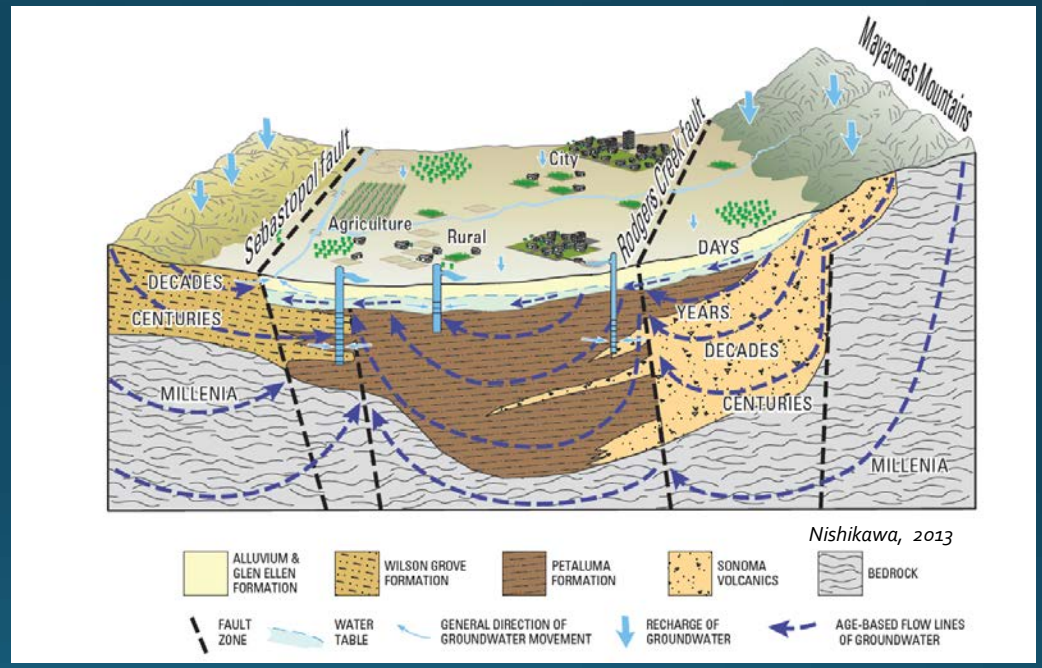
Task 1 – Compile Data

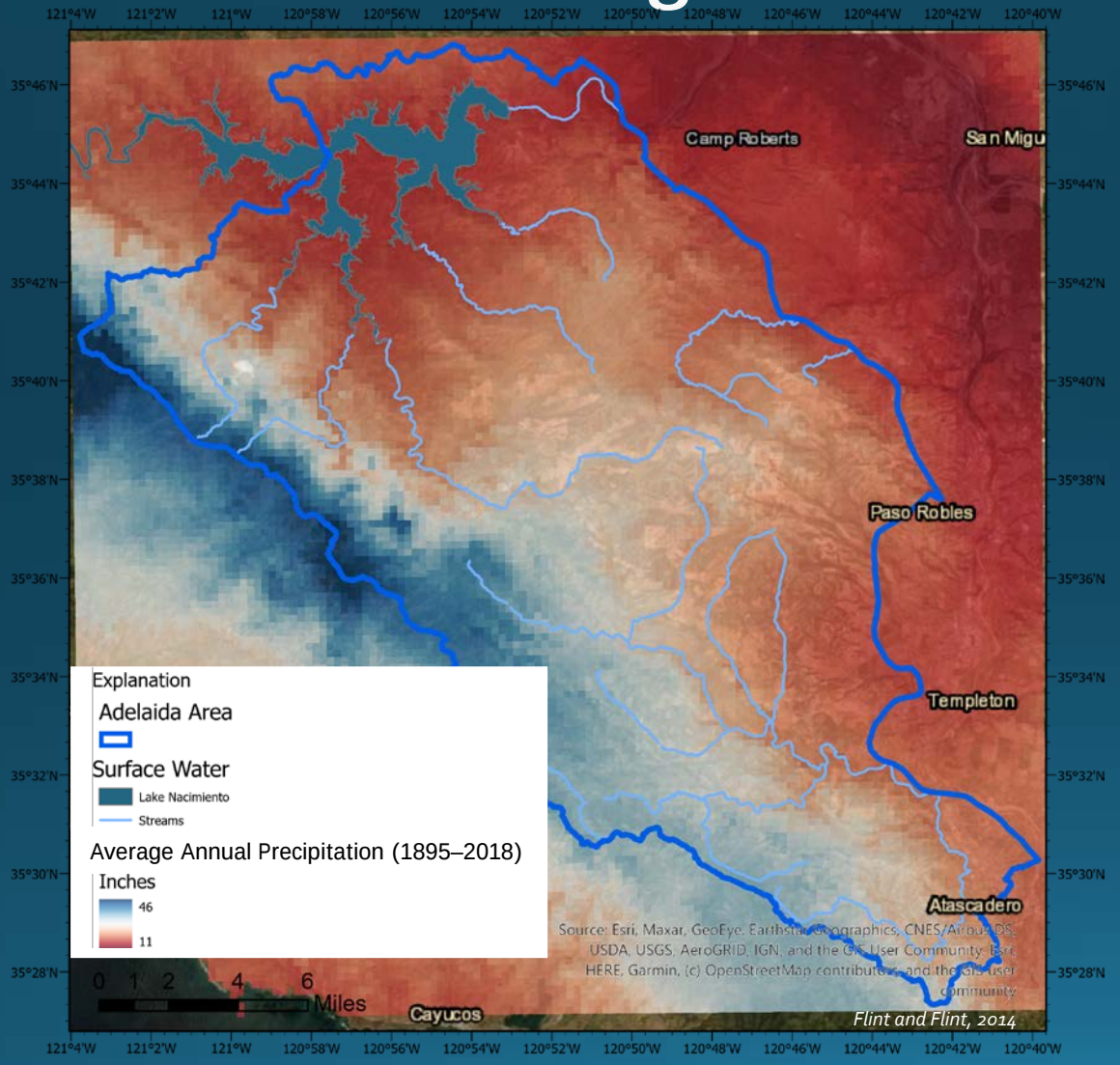
- Hydrologic Budget Inputs
  - Precipitation
  - Streamflow
  - Anthropogenic sources
  - Groundwater underflow

- Hydrologic Budget Outputs
  - Streamflow
  - Pumping
  - Evapotranspiration
  - Groundwater underflow



Nishikawa, 2013

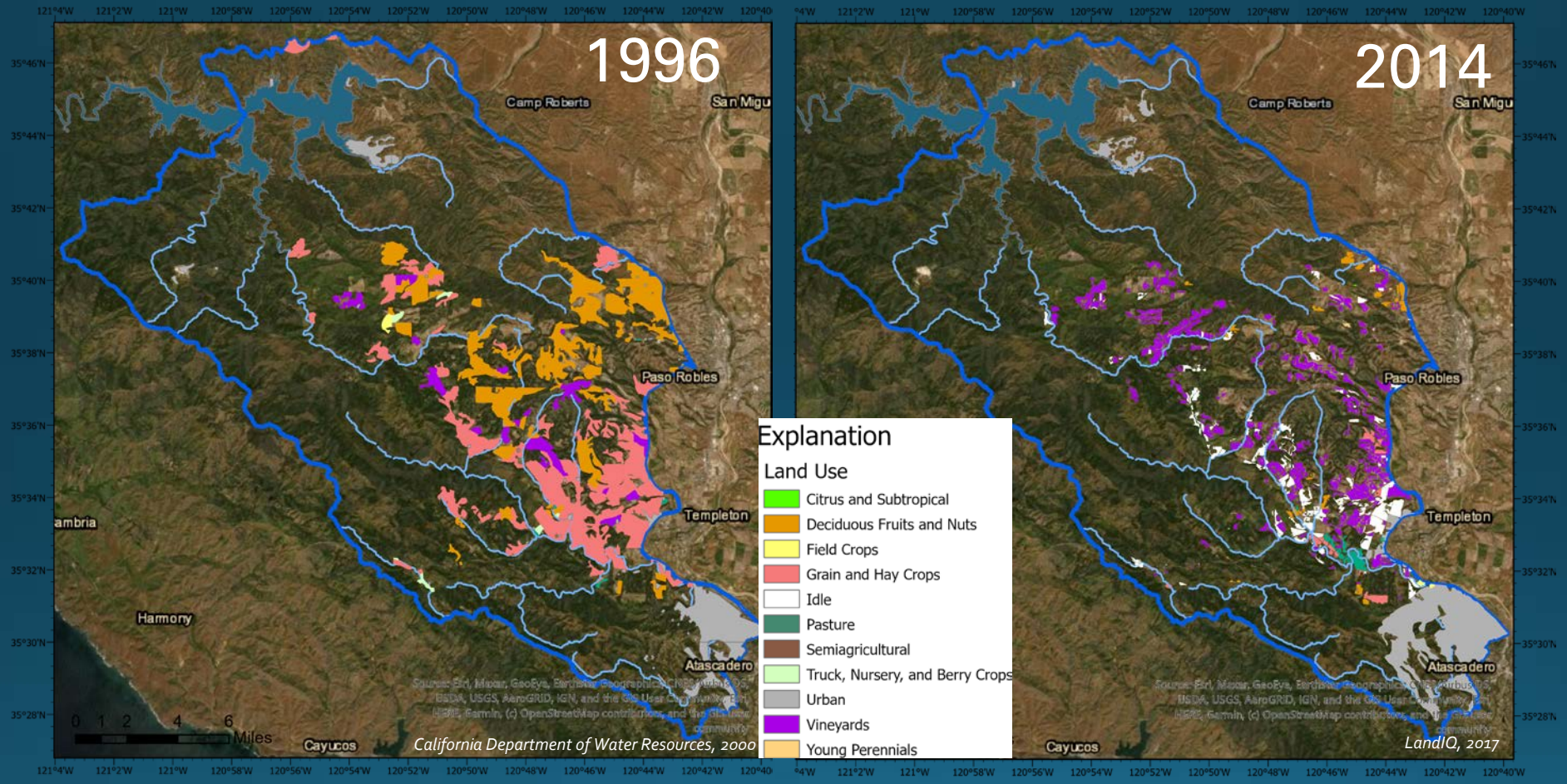
Task 1 – Compile Data: Climate and Recharge Estimates



- Precipitation, temperature, and natural recharge from 1895–2018
- USGS Basin Characterization Model (Flint and Flint, 2014)

USGS

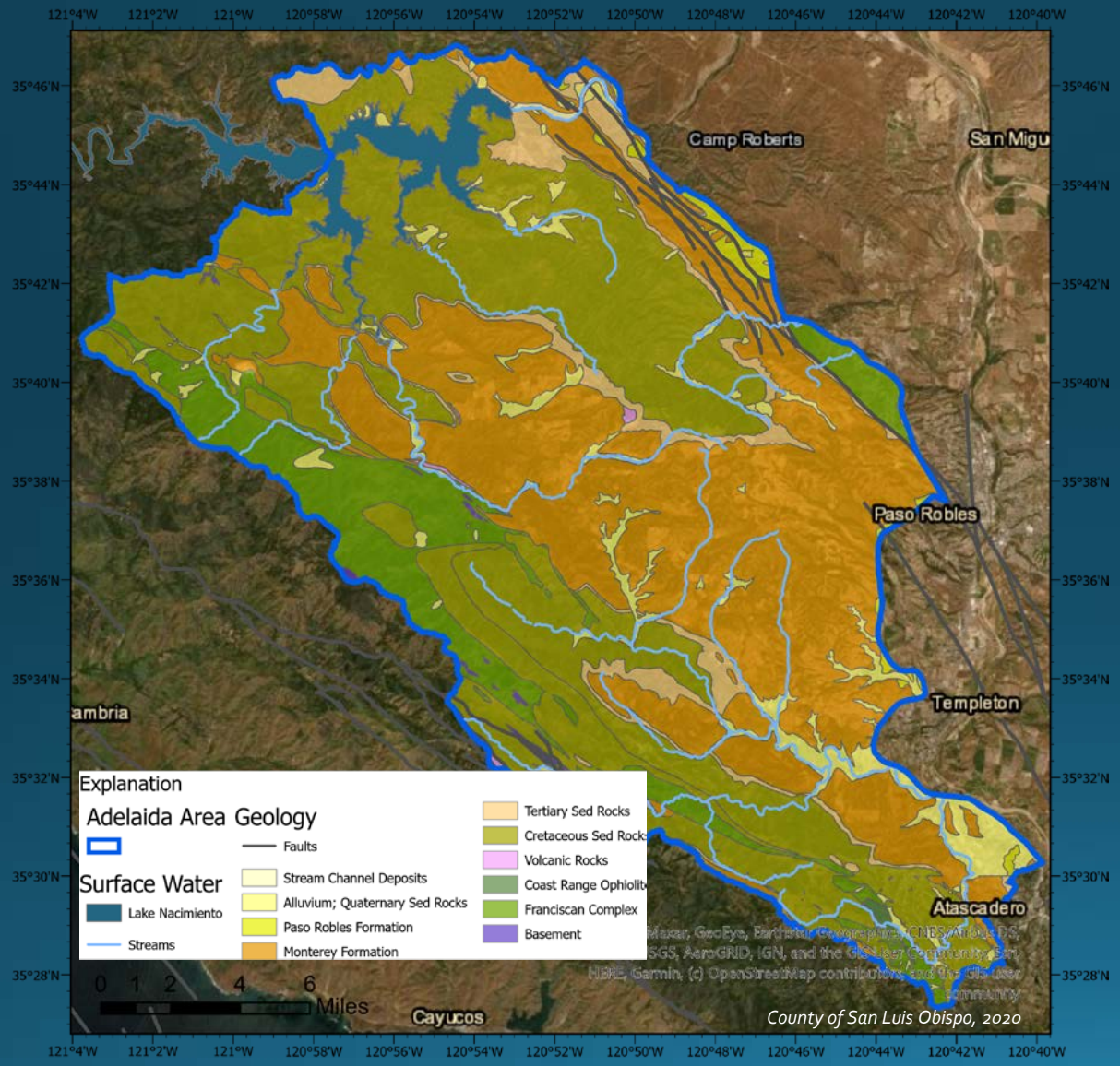
Task 1 – Compile Data: Land Use



Shift in crop type from fruits and nuts, and grain and hay crops, to vineyards

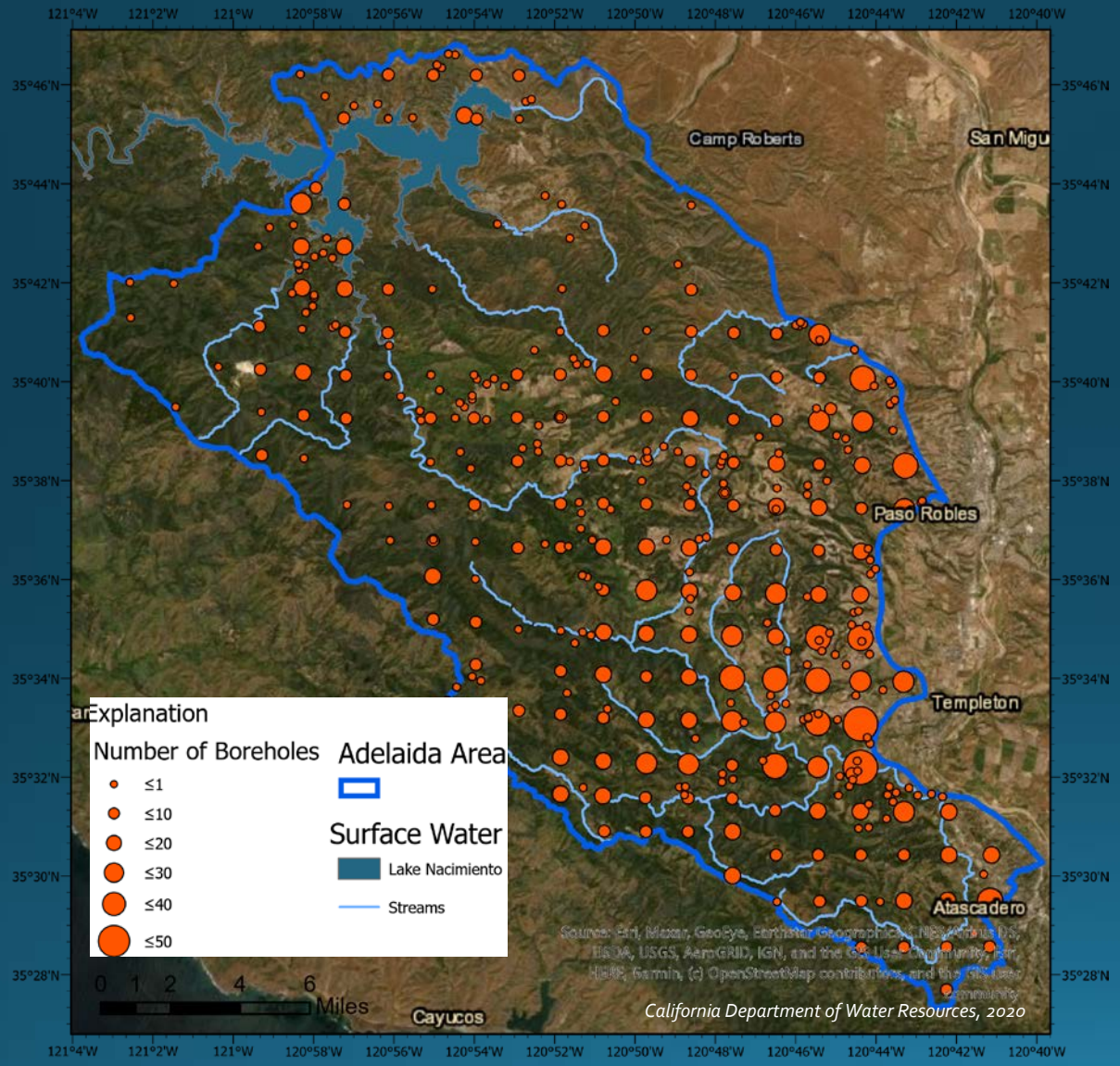
USGS

Task 1 – Compile Data: Geology



- Consolidated sedimentary rocks
  - Monterey Formation
- Alluvium along stream channels
  - May be source for groundwater recharge

Task 1 – Compile Data: Borehole



- California Department of Water Resources
- Well construction
  - Total depth
  - Perforation interval
- Hydrogeology
  - Well yield
  - Initial depth to groundwater
  - Lithologic and geophysical logs

Task 1 – Compile Data: Hydrology

U.S. Geological Survey, 2020; R. Dienzo, San Luis Obispo County, written communication, 2019

Groundwater

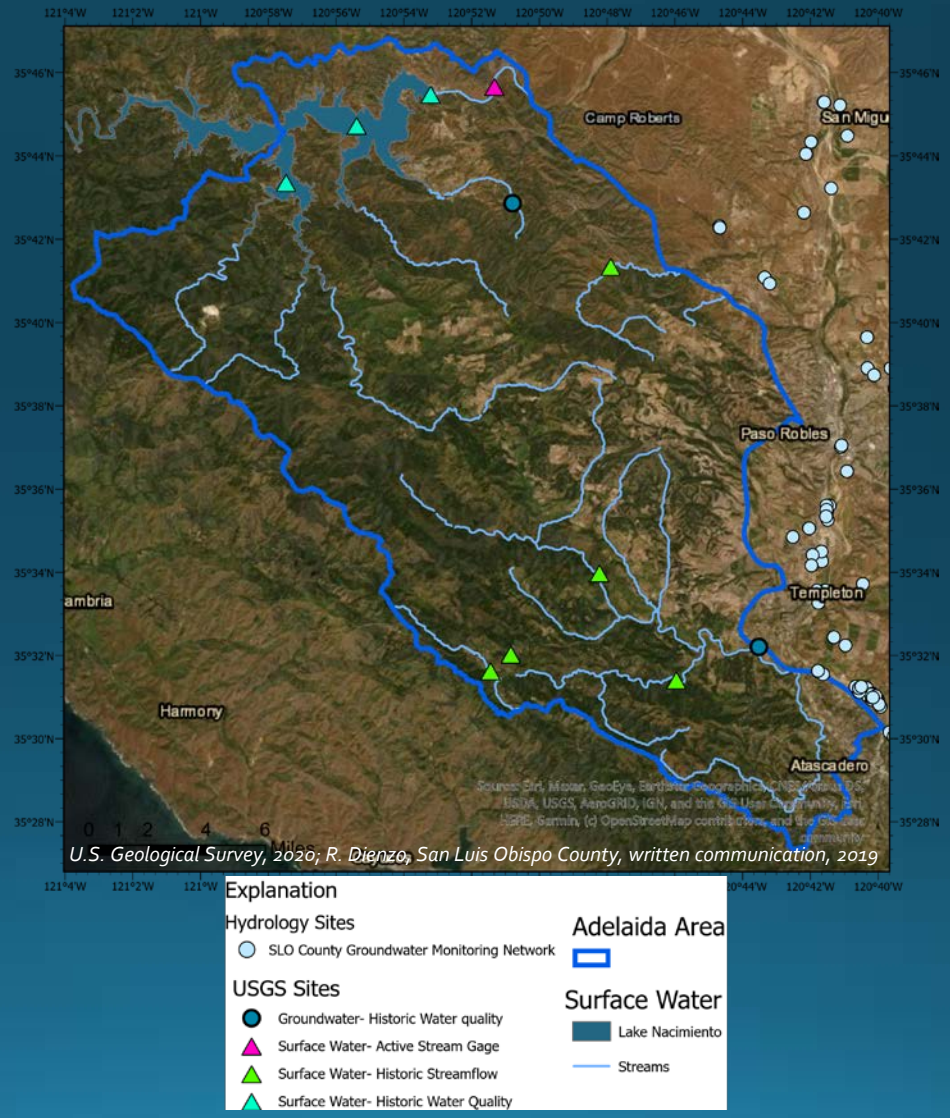
- Historical water quality
- San Luis Obispo (SLO) County monitoring-well network outside Adelaida Area

Surface Water

- One active streamgage
- Historical streamflow
- Lake Nacimiento water quality

Task 1 – Compile Data: Landowner Hydrogeologic Data

- **Well construction**
  - Lithology, geophysical logs
  - Perforation intervals
  - Location
- **Groundwater-level measurements**
  - Temporal changes
  - Spatial changes
  - Stream channels and consolidated rock areas
- **Pumping records**
  - Water demand
- **Water Quality**
  - Groundwater and surface-water chemistry

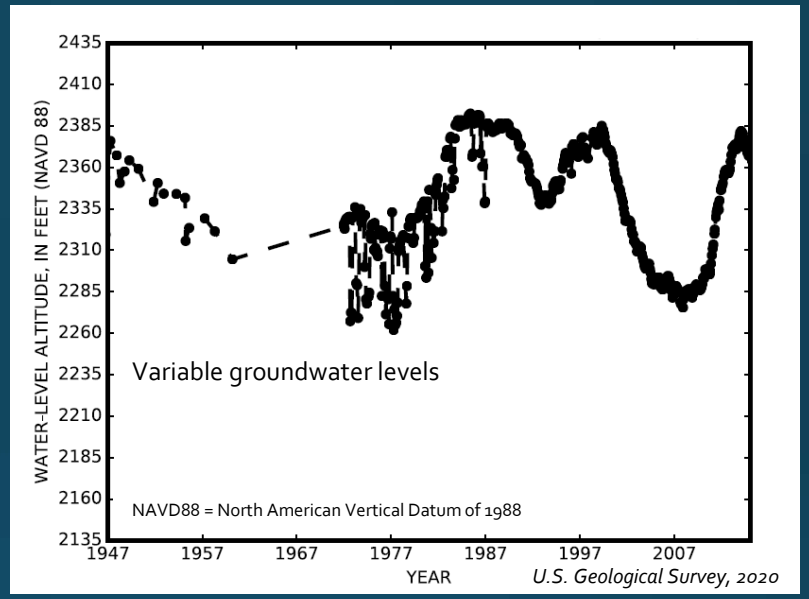


U.S. Geological Survey, 2020, R. Dienzo, San Luis Obispo County, written communication, 2019

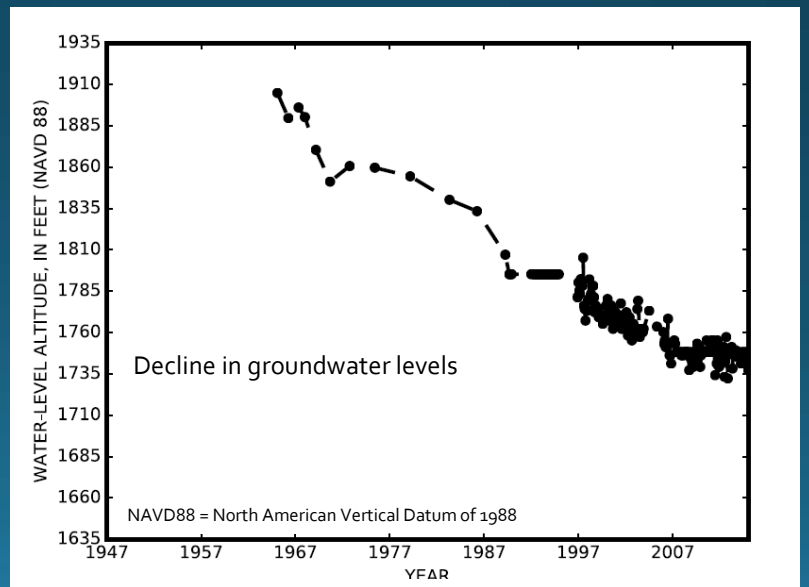
Task 1 – Evaluate Available Data

- **Well construction**
  - Lithology, geophysical logs
  - Perforation intervals
  - Location
- **Groundwater-level measurements**
  - Temporal changes
  - Spatial changes
  - Stream channels and consolidated rock areas
- **Pumping records**
  - Water demand
- **Water Quality**
  - Groundwater and surface-water chemistry

Example hydrographs from a groundwater basin in southern California



U.S. Geological Survey, 2020



U.S. Geological Survey, 2020 (1964–2006); Western Heights Water Company, written communication, 2016 (2007–2014)

Task 1: Identify Data Gaps and Propose Specific Work

- Identify gaps in compiled data
  - Where are data lacking?
  - What kind of data are lacking?
  - Where and what type of new data should be collected?

- Propose specific work for future tasks
  - New data collection, such as:
    - Groundwater-level measurements
    - Water-quality samples
    - Streambed-infiltration estimates
  - Hydrogeologic framework model

USGS

Task 1 – Planned Timeline

- Community outreach meeting – August 6, 2020
- Receive landowner data – August/September 2020
- USGS field visit – Fall 2020
- Finish data evaluation – December 2020
- Community outreach meeting – February/March 2021
- SLO County Board of Supervisors (BOS) Meeting – Spring 2021

Project web site will be kept updated during entire project

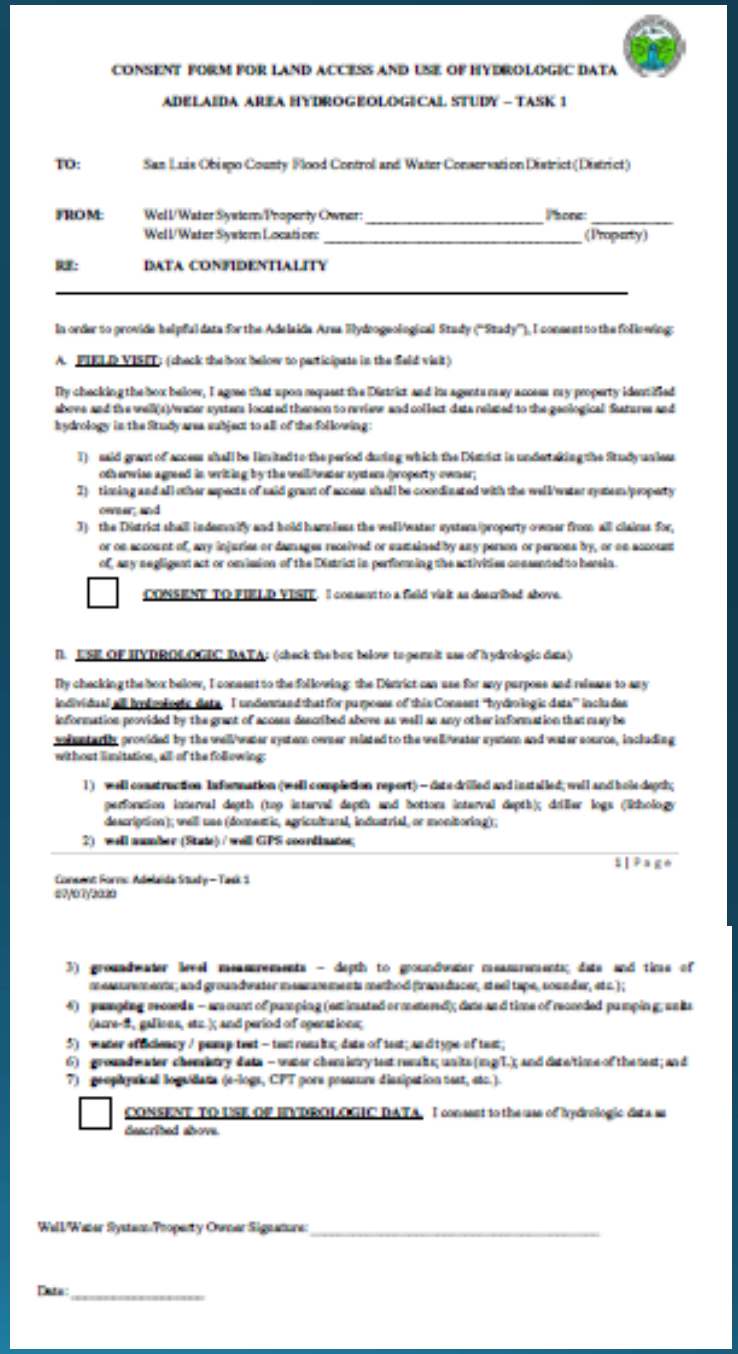
USGS

Consent Forms

Engagement with stakeholders to provide local knowledge and data for the Adelaida Hydrology Study

Consent Forms:

Contact: Devin Best, Executive Director
Upper Salinas – Las Tablas Resource Conservation District
admin@us-ltrcd.org
(805) 536-3196



CONSENT FORM FOR LAND ACCESS AND USE OF HYDROLOGIC DATA

ADELAIDA AREA HYDROGEOLOGICAL STUDY – TASK 1

TO: San Luis Obispo County Flood Control and Water Conservation District (District)

FROM: Well/Water System/Property Owner: _____ Phone: _____
Well/Water System Location: _____ (Property)

RE: **DATA CONFIDENTIALITY**

In order to provide helpful data for the Adelaida Area Hydrogeological Study ("Study"), I consent to the following:

A. **FIELD VISIT:** (check the box below to participate in the field visit)

By checking the box below, I agree that upon request the District and its agents may access my property identified above and the well(s)/water system located thereon to review and collect data related to the geological features and hydrology in the Study area subject to all of the following:

1) said grant of access shall be limited to the period during which the District is undertaking the Study unless otherwise agreed in writing by the well/water system/property owner;
2) timing and all other aspects of said grant of access shall be coordinated with the well/water system/property owner; and
3) the District shall indemnify and hold harmless the well/water system/property owner from all claims for, or on account of, any injuries or damages received or sustained by any person or persons by, or on account of, any negligent act or omission of the District in performing the activities consented to herein.

☐ **CONSENT TO FIELD VISIT.** I consent to a field visit as described above.

B. **USE OF HYDROLOGIC DATA:** (check the box below to permit use of hydrologic data)

By checking the box below, I consent to the following: the District can use for any purpose and release to any individual **all hydrologic data**. I understand that for purposes of this Consent "hydrologic data" includes information provided by the grant of access described above as well as any other information that may be **voluntarily** provided by the well/water system owner related to the well/water system and water source, including without limitation, all of the following:

1) **well construction information (well completion report)** – date drilled and installed; well and hole depth; perforation interval depth (top interval depth and bottom interval depth); driller logs (lithology description); well use (domestic, agricultural, industrial, or monitoring);
2) **well number (State) / well GPS coordinates;**

1 | Page

Consent Form: Adelaida Study – Task 1
07/07/2020

3) **groundwater level measurements** – depth to groundwater measurements; date and time of measurements; and groundwater measurements method (transducer, steel tape, sounder, etc.);
4) **pumping records** – amount of pumping (estimated or metered); date and time of recorded pumping; units (acre-ft, gallons, etc.); and period of operations;
5) **water efficiency / pump test** – test results; date of test; and type of test;
6) **groundwater chemistry data** – water chemistry test results; units (mg/L); and date/time of the test; and
7) **geophysical logs/data** (e-logs, CPT pore pressure dissipation test, etc.).

☐ **CONSENT TO USE OF HYDROLOGIC DATA.** I consent to the use of hydrologic data as described above.

Well/Water System/Property Owner Signature: _____

Date: _____

Opportunities to Engage

Opportunities to provide Information and Input:

- Join the County's email lists to stay informed
- Attend the next Adelaida Community Meeting: USGS to present findings from Task 1
- Provide input to the SLO County Board of Supervisors Meeting

Thank you!

Sign up for our **EMAIL LIST** at:

https://www.slocounty.ca.gov/AdelaidaStudy

CONTACT: Devin Best, Executive Director

Upper Salinas – Las Tablas Resource Conservation District

devin@us-ltrcd.org

(805) 536-3196

Upper Salinas – Las Tablas Resource Conservation District
https://www.us-ltrcd.org/adelaida-hydrology-study

San Luis Obispo County Flood Control and Water Conservation District
https://www.slocounty.ca.gov/AdelaidaStudy

USGS
https://www.usgs.gov/centers/ca-water/science/evaluation-groundwater-resources-adelaida-area-san-luis-obispo-county?qt-science_center_objects=0#qt-science_center_objects

References

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- U.S. Geological Survey, 2020, USGS water data for the Nation: U.S. Geological Survey National Water Information System database, at https://doi.org/10.5066/F7P55KJN.

USGS